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DECEMBER 1944

INTELLIGENCE BULLETIN

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MILITARY INTELLIGENCE DIVISION
WAR DEPARTMENT • WASHINGTON, D. C.

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Cover Illustration—Japanese troops laying hemisphere mines along a jungle road (page 8).



"Japanese infiltration parties sent out to attack and demolish Allied artillery emplacements are often drawn from the engineers." (Page 38)



JAPAN

NEW POTTERY LAND MINE INTRODUCED ON LEYTE ISLAND

A Japanese pottery land mine, designed to evade detection by standard mine-detecting equipment, has been encountered during the liberation of Leyte Island. The exterior of this mine is brown, fading into white around the fuze pocket. The fuze is made of plastite, and may be detonated either by pressure or by pull. The mine is 8 inches in diameter and 4 inches high. The explosive is believed to be Type 88.

It is reasonable to expect that the Japanese pottery industry will be able to turn out large quantities of these mines in a comparatively short time, if the enemy High Command should decide to employ them on an extensive scale.

In connection with this new type of mine encountered on Leyte, the following land-mine data obtained in the Marianas is of special significance. This data, which comes from an enemy source, refers to a so-called Model 3 land mine, which has a brown earthenware case and no exposed parts made of metal. The Model 3 is circular in shape. Its fuze body, cover, plunger, and striker support are made of bakelite. The fuze seat is of hard rubber. The springs, pins, and striker—all contained inside the fuze—are the only metal parts of the mine. When analyzed in conjunction with the data from Leyte, these characteristics, together with others which have been reported,

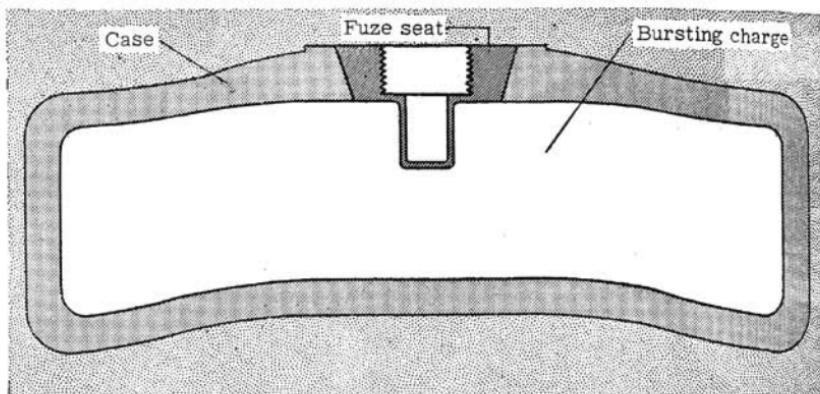
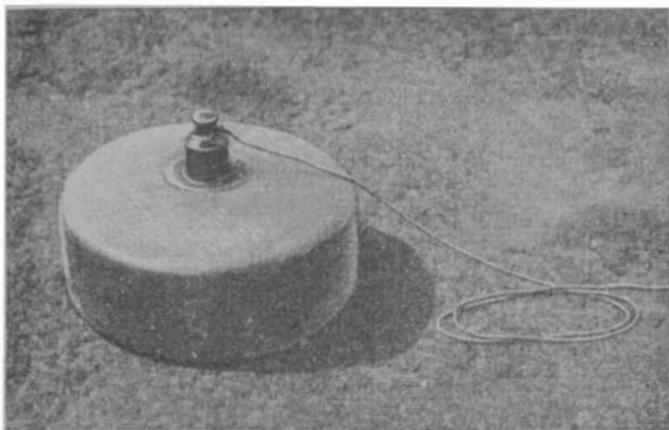


Figure 1. Model 3 Land Mine.

suggest that the Japanese very possibly have begun to make active use of the Model 3 or a modification of it.

The Model 3 is manufactured in two sizes. The larger mine is $10\frac{1}{2}$ inches in diameter and $3\frac{1}{2}$ inches high. It contains $6\frac{1}{2}$ pounds of explosive, and is intended to be effective against personnel within a radius of 33 feet. The smaller mine is $8\frac{1}{2}$ inches in diameter and $3\frac{1}{2}$ inches thick. It contains $4\frac{1}{2}$ pounds of explosive, and is intended to be effective against personnel within a radius of 26 feet. The Japanese state that either of these mines is effective against the tracks of a heavy tank. The bursting charges may be any of these three compositions: ammonium nitrate (50 percent), TNT (50 percent); ammonium nitrate (90 percent), dinitronaphthalene (10 percent); ammonium perchlorate (75 percent), ferro-silicon (16 percent), sawdust (6 percent), and crude oil (3 percent).

The fuze of the Model 3 land mine represents a particularly interesting development. It may be detonated by pressure or pull, after the safety pin has been removed, and, according to



Model 3. Land Mine and Fuze.

a Japanese source, will function satisfactorily even after it has been buried in the ground for a long period.

A percussion hammer within the fuze is held in position by a release fork, to which a trip wire may be attached. When the wire is pulled, the fork releases the hammer, which is forced downward by the percussion hammer spring. The hammer comes in contact with the striker, forcing it against the percussion cap. When pressure is applied directly on the head of the fuze, the plunger spring is compressed, and the entire plunging group, moving as a unit, is forced downward. The hammer comes in contact with the head of the striker and again forces it against the percussion cap. A pressure of approximately $4\frac{1}{2}$ pounds or a pull of about 22 pounds is said to be required to force detonation.

The fuze is so threaded as to be interchangeable with the standard Model 88 instantaneous impact fuze and the Model 100 dual-action artillery fuze. If the Model 3 land-mine fuze

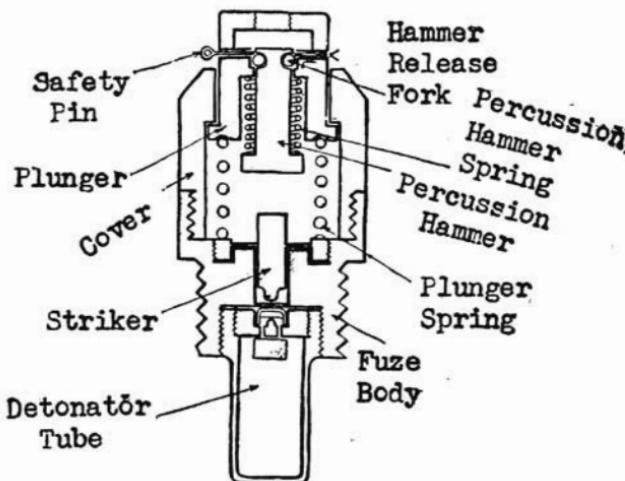
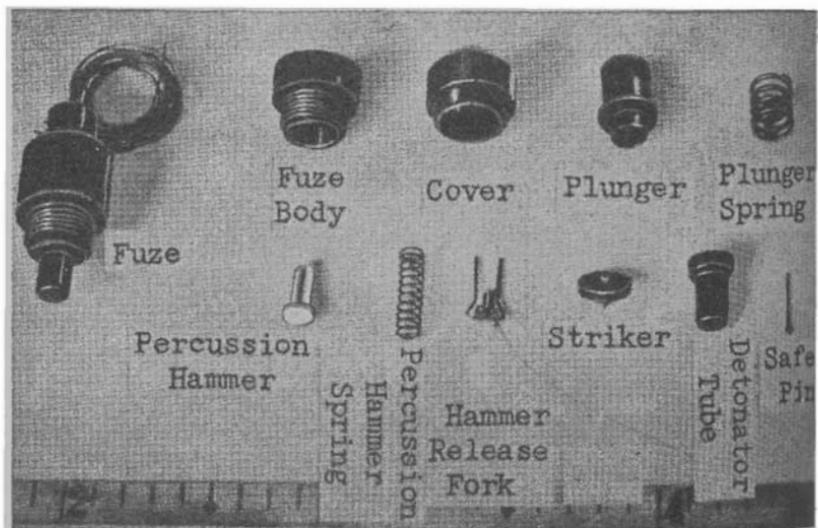
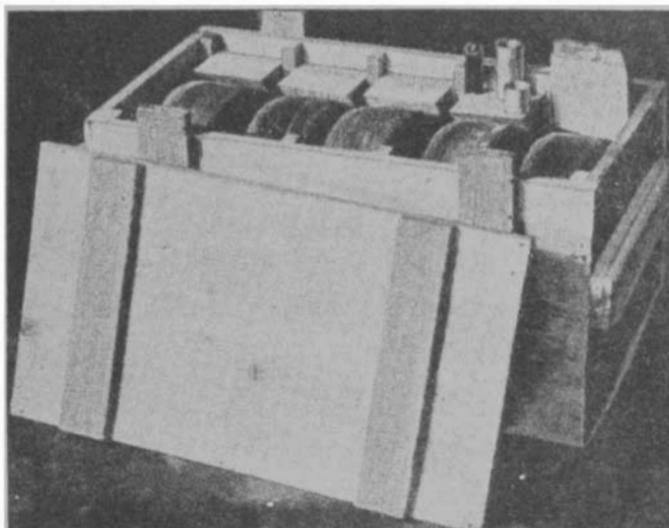


Figure 2. Section of Model 3 Land Mine Fuze.



Component Parts of the Model 3 Land Mine.



Model 3 land mines are packed 5 to a box, with 5 fuzes packed separately in the same box.

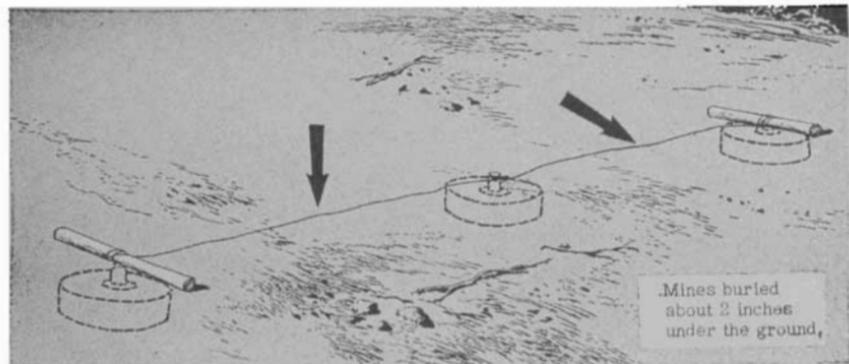


Figure 3. These Model 3 land mines have been laid with trip wires tied to sticks of wood. There is a mine under each stick and a third mine in the middle. The mines may be detonated by direct overhead pressure or by a pull on either trip wire.

is substituted for a standard fuze in any common mortar or howitzer shell, the shell may be converted into an effective land mine or booby trap. Also, the Model 3 land-mine fuze may be inserted into a block of picric acid, TNT, or other explosive, and used similarly.

The mine's sensitivity to detonation by a normal fall is said to be negligible. The Japanese claim that the mine will not explode when it is dropped onto a concrete floor from a height of 1½ feet, and that it can be dropped safely onto ordinary ground from a height of 13 feet.

Because of its brown color and unglazed surface, the Model 3 mine may be camouflaged easily in almost any terrain.

JAPANESE MINEFIELD TACTICS IN THE SOUTHWEST PACIFIC

An awakening Japanese interest in the use of land mines has been indicated recently in the Southwest Pacific. The appearance of the pottery mine (see page 1) may properly be considered a part of this trend. Although the Japanese thus far have shown little apparent concern for the use of antipersonnel and antitank minefield defense, U. S. troops may well expect to encounter planned Japanese minefields in the future.

As we draw closer to the enemy homeland, and as operations take place in open, jungle-free terrain, planned minefields may become much more of a threat. Moreover, the existence of road nets in more civilized countries may be counted upon to stimulate Japanese road-mining tactics on a scale far greater than that encountered thus far.

Japanese land mines, both standard and improvised, have been encountered on a small scale during operations on Cape Hoskins (New Britain), in the Admiralty Islands, and on Noemfoor Island (off the north coast of Netherlands New Guinea). However, in laying these fields, the Japanese have failed to exploit the powerful defensive characteristics of carefully laid mines. With the exception of a minefield found on the road to Cape Hoskins airdrome, many of the fields have been laid with no particular pattern in mind, and seem to have been prepared by inexperienced troops. In fact, a complete lack of uniformity has been found even in minefields laid by members of the same unit.

IN THE ADMIRALTY ISLANDS

In the Admiralty Islands, the Japanese had many more mines, both antipersonnel and antitank, than they attempted to use. These were found in dumps, but usually the detonators were missing.

The first mines were encountered when a dismounted U. S. cavalry squadron launched an assault against a position from which the enemy had been attacking earlier in the day. The area through which the U. S. advance was made had been sown with antipersonnel mines, both the stationary and the bouncing types.

Mines were next encountered by a U. S. regiment which found it necessary to move over a road which had been corduroyed in part. At one point a swamp on either side of the corduroy formed an effective defile to vehicles which were forced to cross the area at that point. Trees had been felled across the road here, and a crude attempt at antivehicular road mining had been made. A depression had been made in the road, into which some hemisphere mines had been set. These had been covered with a piece of canvas, which, in turn, had been covered with twigs and dirt. The attempt was obvious, and the mines were removed without difficulty.

At two other points during the advance, single hemisphere mines were found poorly hidden alongside the road. Vines used as trip wires had been attached to the detonators, but the mines were easily detected and removed.

Perhaps the most extensive use of mines in the Admiralties was encountered during the advance of the U. S. force on Lorengau. Here the enemy used push-igniter and pull-igniter

antipersonnel mines, and antitank mines of the magnetic, bar, and hemisphere varieties. However, no consistent minelaying plan was reported.

After Lorengau had been captured, an examination of the beach defenses showed that the Japanese had anticipated an amphibious attack against their positions and had laid mines accordingly. Offshore mines of the hemisphere type were found on the beaches in position to damage landing craft. On and behind the beach, the Japs had constructed wire obstacles. This defense had been supplemented by antipersonnel and anti-tank mines laid several days earlier, when the Japanese had concluded that a U. S. landing would be attempted on this beach.

CAPE HOSKINS, NEW BRITAIN

The most intelligent enemy attempt at mining in the Southwest Pacific occurred on Cape Hoskins, New Britain, on the road between Malalia and the Hoskins airdrome. Although the mines were detected and removed by our troops without casualty, the minelaying in this instance indicated some forethought on the part of the enemy.

The mines used in this instance were the Model 93 land mine armed with antipersonnel fuze, the Model 99 armor-piercing magnetic mine, and the fragmentation hand grenade. In each case the mines were buried from 1 to $1\frac{1}{2}$ inches below the surface of the road. They were obviously placed to harass advancing troops and to block the road. Most significant is the fact that here the Japanese employed a definite pattern in laying their mines (see fig. 4).

Elements of this installation included a row of hand grenades to be detonated by a pull wire leading to a foxhole at one side of the road. At one point a tree had been felled across the road, and antipersonnel mines had been placed at the logical point at which a soldier would step over the fallen tree. Three of the Model 93 mines had been booby-trapped with grenades, which would be detonated if an attempt were made to remove the mines.

In the airdrome area itself, a crude attempt at laying a minefield had been made. Here the enemy had improvised by using his standard 60-kilogram aerial bombs as land mines. These bombs had been planted with the nose fuzes projecting about 4 inches above the ground. No attempt had been made to place these bomb mines in a definite pattern. This improvised minefield had not been coordinated with other ground defenses

constructed nearby, and no advantage had been taken of terrain features which might have tended to canalize vehicular traffic.

These mines were well camouflaged by the mat of vines which grew over the area, and had been fuzed with ordinary bomb fuzes, each equipped with a safety wire and a propeller-type arming device. [This device ordinarily removes itself in flight before the bomb is armed.] Curiously, not one bomb found in this minefield had either the safety wire or the arming device removed.

NOEMFOOR ISLAND

Six minefields of aerial bombs were found on Noemfoor Island, all situated near the two air strips. Here, again, the Japanese used no formal pattern in laying their mines, and the whole operation appeared to be a haphazard field expedient.

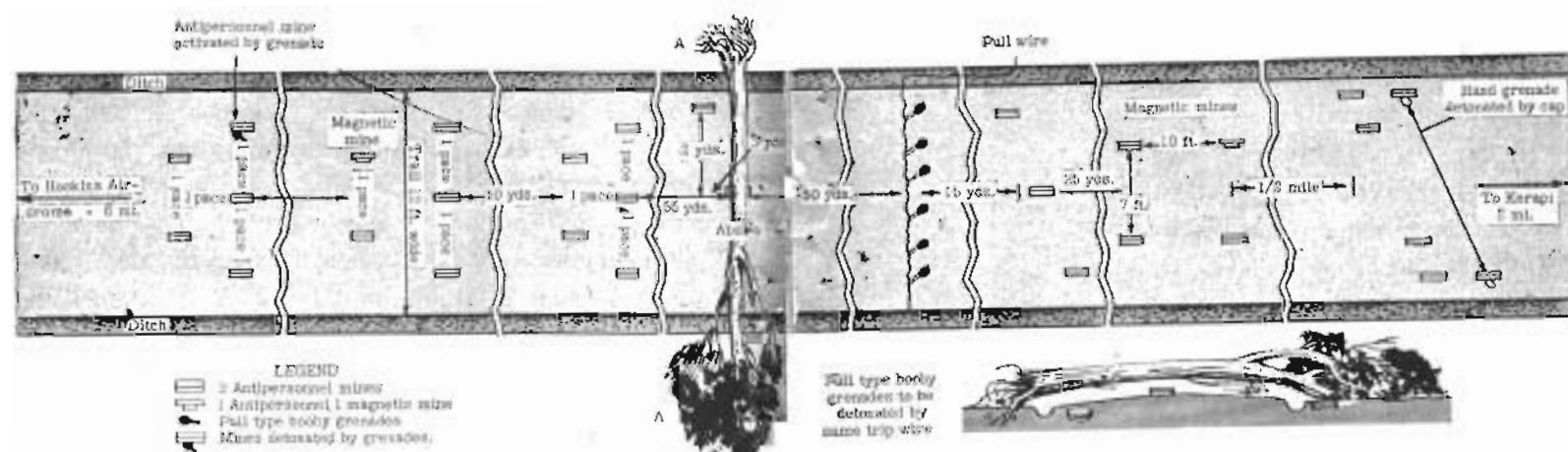


Figure 4. Japanese Patterned Minelaying on Cape Hoskins, New Britain.

Some of the fields consisted of a single row of these improvised mines placed approximately at 3-yard intervals. Others consisted of bombs set in several rows in depth, with about 6 to 8 feet between bombs. An attempt had been made to tie in some of these fields with terrain features which ordinarily would block vehicular traffic.

Some of these fields were protected in front by wire entanglements, and some had been prepared in front of ground defenses. In individual cases, these mines had been set dangerously close to the positions they were meant to defend, one bomb having been placed within 10 feet of an artillery piece emplaced above ground.

As on Cape Hoskins, these bomb mines were armed with a standard bomb fuze, but on Noemfoor about 70 percent of the fuzes had been set for instantaneous detonation. Most of the remainder of the bombs had the safety wire and arming device, or both, still unremoved. This was unusual in that many of these unarmed bombs had been placed beside bombs fully prepared for detonating. None of the bombs had been booby-trapped.

About 90 percent of these bomb mines lacked adequate concealment. Small depressions were found where they had been laid, or else the fuzes protruded from the ground. The positions of some of the bombs were marked by 12-inch sticks stuck upright in the ground.

A few Model 93 mines were found on Noemfoor, but they were not used in minefields. Some Model 99 armor-piercing mines were found in foxholes, and apparently were to have been thrown at approaching tanks.

ENEMY MINE DOCTRINE

The fact that the Japanese in the Southwest Pacific have shown little foresight to date in the tactical employment of land mines is no indication that they will continue to disregard training in the use of such weapons. On the contrary, recent reports indicate an awakening interest in this subject among certain enemy units.

Instructions recently issued to some Japanese troops in the far Southwest Pacific areas attempt to establish definite uniformity and improvement in the employment of land mines. These instructions specify that "mines will be laid between tank obstacles or in the area where employment of fire power is difficult. Or else they will be used in the area where construction of other obstacles is not permitted due to the nature of the terrain. However, they are occasionally to be used together with other tank obstacles or ordinary obstacles in important areas."

These general instructions were amplified somewhat by the enumeration of certain points to be observed:

1. The minefield must be covered by fire and an observation party maintained.
2. Make it difficult for the enemy to detect the minefield. Utilization of a reflecting ground surface is recommended.
3. The field should not hinder the movement of friendly troops.
4. Moist areas will be avoided owing to the characteristics of mines.
5. Laying will be done properly so as to insure that mines will explode.
6. Mines must be laid at the proper time.
7. Use of dummy mines should be considered.

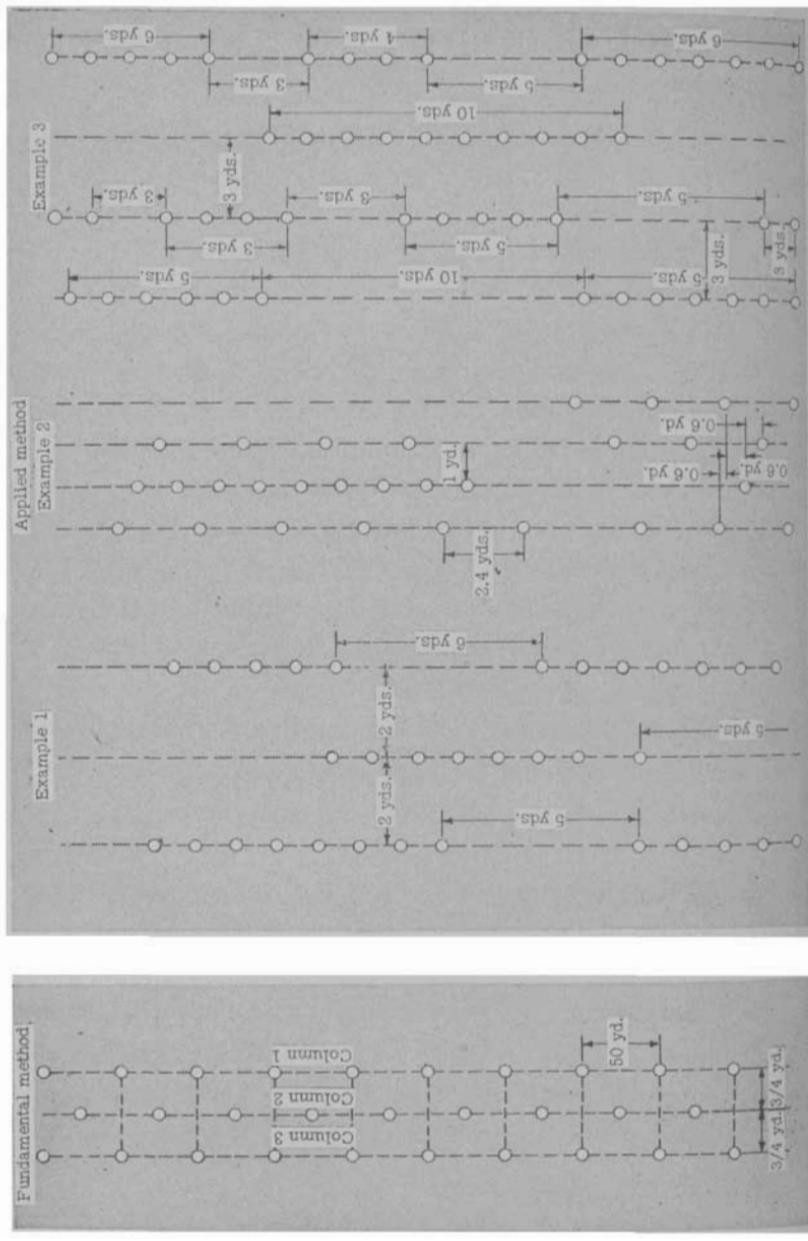


Figure 35. Minefield Patterns Recommended by a Japanese Army Headquarters.

Accompanying these instructions were four sketches of recommended minefield patterns (see page 14). One of these sketches establishes a fundamental pattern, while the others indicate variations of this pattern to be used in the actual placing of mines in the field. However, the small advantage in counterdetection gained by varying the basic pattern, as indicated in the sketches, is offset by the difficulties which would be encountered in dispersing the mines accurately in an actual minelaying operation. No practical measurements, such as the number of paces between mines, is given for the benefit of the soldiers doing the work.

In this respect, the instructions as a whole are very general. They tell "what" should be done, but neglect to tell "how" the minelaying should be carried out. It is possible that, like many such Japanese orders, the details and the operational technique are left to the discretion of subordinate commanders. Except for an indication that the minefields "should not hinder the movement of friendly troops," no provision is made for mapping the minefield area or otherwise marking it for the attention of friendly units.

It is not known how widely this doctrine and these patterns have been studied by the entire Japanese army. However, an awakening enemy interest in minefield patterns certainly seems indicated.



THEY LEARNED *by* EXPERIENCE

The Japanese today are as wily as they were two years ago, and every once and a while they come up with another trick or tactic designed to kill the unwary soldier. Men and officers, home after months in the Pacific combat areas, have told of some of their experience and this is what they say:

Watch Out for These Tricks

A soldier from Bougainville—"One of the ruses used by the Japs was to dig foxholes and post snipers with their rifles fixed on the points where the foxholes were dug. Sometimes American troops would find these holes and use them as their own positions, and the snipers with sights already fixed would fire successfully.

"Another trick the Japs used was to fire several rounds from a pillbox in order to show its location to our troops. When we advanced to knock out the pillbox, we would be met by flanking fire from machine guns concealed on both sides of us."

A high-ranking officer from Saipan—"A decoy ruse was used by the Japanese troops who secreted themselves in the natural caves on Saipan. The plan was to place a Japanese sword or



“The plan was to place a Japanese sword or rifle near the opening of the cave to attract souvenir hunters.”

rifle near the opening of the cave to attract souvenir hunters. The trick worked, and there were many unnecessary casualties. Such areas should be placed under restriction by the military authorities as long as the sniper threat exists.

“Also, the Japanese soldiers were known to have taken civilian Japanese men, women, and children into the caves with them. These civilians were sent out by the enemy to forage for food and water left by the Americans.

“The Japanese used other means of luring the Americans into traps. They would make cloven-sandal tracks in the soft

mud. American soldiers would follow the trail expecting to come upon one Jap. Instead our men would walk into gunfire.

"The Japanese would start small cooking fires in a little valley or near the caves. Attracted by the smoke, our troops would proceed, expecting to surprise Japs preparing a meal. Instead, these patrols would be ambushed by Japs waiting along the trail.

"When news of these tricks got around, the Americans, upon discovering smoke or footprints, would send out large detachments of men and clean out the Japs."

A sergeant from Bougainville—"The Japs had several tricks of speaking or calling out in English, which fooled the American troops, consequently snaring them. In one instance several Japs shot some Americans and then yelled 'Medics!' As soon as the aidmen rushed up to the wounded, the Japs started to pick them off."

Don't Touch the Stuff

An officer from the Central Pacific—"Large quantities of liquor were found on Saipan. A whiskey distillery was captured, and bottles of saki and containers of other beverages were found scattered all over the island.

"The men had been warned against drinking any of the beverages until medical officers could test it. These warnings were ignored in many cases. As a result, some of the men became violently drunk, while others died of what was diagnosed as wood-alcohol poisoning.

“The wood alcohol was found in bottles bearing Burgundy labels. It is strongly suspected these bottles of poisoned alcohol were planted by the Japs with the idea the liquor would be consumed by unwary Americans.”

Notes on Attack

A private first class from the Southwest Pacific—“Every night the Japs would attack the same spot on our perimeter. They were very persistent in doing this and never changed their plan. It was pretty obvious where these attacks were going to take place.”

A private first class from Los Negros—“The Japs usually attacked us between 0300 and 0500 hours. Prior to that time, they would make small nuisance raids, which would not permit our men to sleep.”

Human Mine Detectors

Two soldiers from the Solomons—“If the Japs found that a large U. S. minefield was in their path, they would not take the time to use mechanical mine detectors. Instead, they would line up a detail of soldiers the entire length of the field, and walk them across. As the soldiers detonated the mines, replacements would be sent in to continue the path. This form of human mine detection was used by the Japs so that their main force could go through quickly.



"The Japs would line up a detail of soldiers the entire length of the field, and walk them across. As the soldiers detonated the mines, replacements would be sent in to continue the path."

"In one case they dispatched a suicide squad to detonate U. S. land mines during the daytime, and then launched a strong counterattack through the same area soon after nightfall. This counterattack was successfully beaten off. On another occasion, the Japs had been unable to locate one of our pillboxes accurately. Three Japs stood up without any concealment, and although they were killed instantly, three Jap machine guns found the location of our pillbox and opened fire on it."

A private first class from Biak—"On Biak the Japanese tied three grenades together with cord, about a foot apart. The Japs would pull the pins, strike the grenades against a solid surface, whirl them around their heads, and then fling the contrivances. They burst with powerful fragmentation effect."

A major general from Makin and Saipan—"The Japs used a spider-type underground defensive position. It consisted of

trenches fanning out from a central position, the pattern resembling spokes extending from the hub of a wheel. The tops of the trenches were covered with brush. In this type of position the Japs were able to move quickly from one location to another.”

A staff sergeant from New Guinea—“We were helped in finding Japanese snipers in the trees when we noticed that sniper trees had footsteps cut in the trunk and a broken limb hiding each Jap.

“The Japanese sniper’s machine gun was stationary and would not revolve. As a result, the sniper would have to wait until an American soldier got in the direct line of fire before letting him have it.”

A soldier from New Britain—“Japanese snipers usually were not in the places where one might have expected to find them. If our troops were advancing along a ridge, the snipers usually were on the low side and fired into our men from trees on the level rather than from above.

“Often the Japs built their positions in reverse—that is, facing away from our lines. When our troops advanced, they would be allowed to pass the defense positions, and, when the Japs started firing, our men would find themselves cut off without a possibility of retreat. The Japs always built their positions so that at least three positions covered each other. When you charged one position, you were in direct fire from the other positions.”

"Stone-wall" Determination

A Marine Corps captain from New Britain—“In combat the Japs still tend to bunch up and talk a great deal when in a partly defiladed area, thus presenting excellent targets for the 81-mm mortar with a super-quick fuze.

“The Jap, when attacking, will keep ‘banging his head against a stone wall,’ and seems to justify it to himself by calling it determination. Whereas the individual can find weak spots and slip through, the mass finds it difficult to effect a breach, and feels to the side for weak spots.

“Most of my experience has been with the Jap on the defense. This phase, however, includes counterattack. Defensively, the Jap is a good fighter, with certain glaring weaknesses.

“One of these weaknesses is his inability to stand being flanked. Probably this stems from his absolute faith in flank attacks. Anyway, when he is flanked, he is likely to pull out, even though it is impossible for him to know the strength of the flanking force. If he doesn’t pull out, he may try counter-bayonet charges against the flankers, rather than wait behind prepared defenses. In the early days of Guadalcanal, one of these charges resulted in slaughter because of some well-placed Marine automatic rifles. I might add that in most of these instances I have observed, the Jap did not have an adequate reserve or well-prepared mortar and artillery concentrations. It is true that he will sometimes leave a most favorable position to launch a “banzai” charge—even though it’s a case of six against 60.

“Another enemy method, used at Natamo and Talesea, is to place a 75-mm field piece to fire down a trail, registered on a

large tree about 50 yards away. As our troops draw near, he fires at the tree, producing a shrapnel effect. I observed that these pieces had a very narrow field of fire, and the positions were not conducive to quick changes in direction—in both cases the guns were knocked out in a bloody slugfest, for our troops were so close they had to hit the deck and throw lead back in self-preservation.

“The problem of speed versus security and the accomplishment of a mission is always present in the jungle. On Guadalcanal the Japs figured correctly that we would tend to stick mainly to the beach road while investigating villages far out from our lines around the airport. Therefore, all their sniping trenches were on the parallel ridges facing the beach trail. Later they figured we knew better than to stick to the lowlands, so they concentrated on the ridge approaches. In short, an outfit must be ready at all times, no matter what the enemy has done in the past.

“Jap security is notoriously bad. When they rest, they sometimes all rest. Quiet troops can really get scalps. One patrol got 13 Japs at the cost of one round of ammunition plus some dulling of knives.”

Booby-trapped Souvenirs

A cavalryman from the Admiralties—“I think that as a general rule only one man in a Japanese machine-gun crew knew how to operate the gun. If he could be identified and killed, it was usually an easy matter to get the remainder of the crew, as they would become excited and confused when the gunner was killed. I seldom observed a Jap machine-gun crew in which two men knew how to operate the gun properly.

"The Japs would watch our positions all day long, and at dark would attack in a bold attempt to capture the machine-gun positions and turn the guns against us. This habit of the Japs was somewhat overcome when the machine guns were established in a more or less open place during the day and then removed to another prepared position as soon as it became dark. The Japs were very fond of our machine guns and tommy guns, and made great efforts to capture them.

"Because of the Japs' fondness for our equipment, we found that booby traps could be successfully baited with our guns and grenades. The Japs planted many booby traps themselves, using swords and flags. The usual plant was to place a land mine close by in such a way that it would be stepped on in an attempt to get the flag or sword. We also learned not to go through the passageway between buildings that had been held by the Japs; these passageways generally were mined."

JAPANESE OFFICERS HOLD A CRITIQUE

One day, during a lull in operations, a group of Japanese officers made a critical analysis of their own tactics against Allied troops in a New Guinea sector. As a result of the meeting, they reestablished for their unit certain principles of offensive tactics typical of Japanese military doctrine.

In discussing the conduct of an attack, the officers agreed that a general study of the battle area terrain should be made on a sand table in preparation for the attack. They noted that, in the past, there had been difficulty in carrying out an operation according to plan, simply because there had not been an adequate study of the routes to be taken.

These officers advocated the use of a flank attack when the situation permitted. "Certain victory," they said, "can be expected by destroying important [Allied] points by a Special Attacking Unit, thereby breaking the Allied chain of command." They concluded that, once this had been done, they could take advantage of the situation and penetrate the Allied flank.

They recommended thorough reconnaissance, prior to launching an attack, of the position their troops would occupy. This, they said, should be particularly true if a night attack in undulating terrain or in a dense, hilly forest were contemplated. Also, the company commander personally was to dispatch his men to their proper attack positions.

The use of a previously organized squad in advance of the attack force was advocated. Greater success can be achieved, they said, by using infiltration and surprise attacks, and by forming small parties of men to carry explosives and hand grenades with which to detonate U. S. antitank mines.

Japanese troops, the officers agreed, should commence attacking if strong hostile fire is met. The position should be penetrated by firing rifles and light machine guns from the hip. Grenades should be used by the riflemen, and the Allied communication network should be cut simultaneously with the firing of the first round of the attack.

Throughout the discussion the Japanese officers seemed to favor the flanking movement as the most decisive maneuver in battle. "The results of envelopment are positive," they said. "At night successful envelopment can be achieved when a portion of the strength advances to the rear of the flank. This has a great effect on morale; therefore it is advisable for even small groups to maintain tactically advantageous positions."

MORE NOTES ON FIELD FORTIFICATIONS

A DEFENSE POSITION IN BURMA

A Japanese company position captured in Burma consisted of three localities, each on a "pimple," with a total front of a little less than 1,000 yards. Each locality was surrounded by a four-strand barbed-wire fence situated about 20 yards forward of the foxholes; in each instance, the wire perimeter was between 200 and 300 yards in circumference. The most unusual features of these all-around defensive positions were the one-man dugouts which had been constructed beside almost every foxhole, and a three-bay light-machine-gun position built of earth and timber. Each dugout was situated at the end of a trench, and had an earth-and-timber cover about 12 inches thick. The three-bay light-machine-gun position is illustrated in Figure 6.

NEW PROTECTIVE MEASURES

Several innovations in Japanese construction of shelters and emplacements have been reported.

The most unusual of these measures is the grenade well, a narrow, fairly deep pit dug in the center of the floor (see fig. 7). When a grenade is thrown through the port or door of the fortification, it rolls into the well—or may be directed

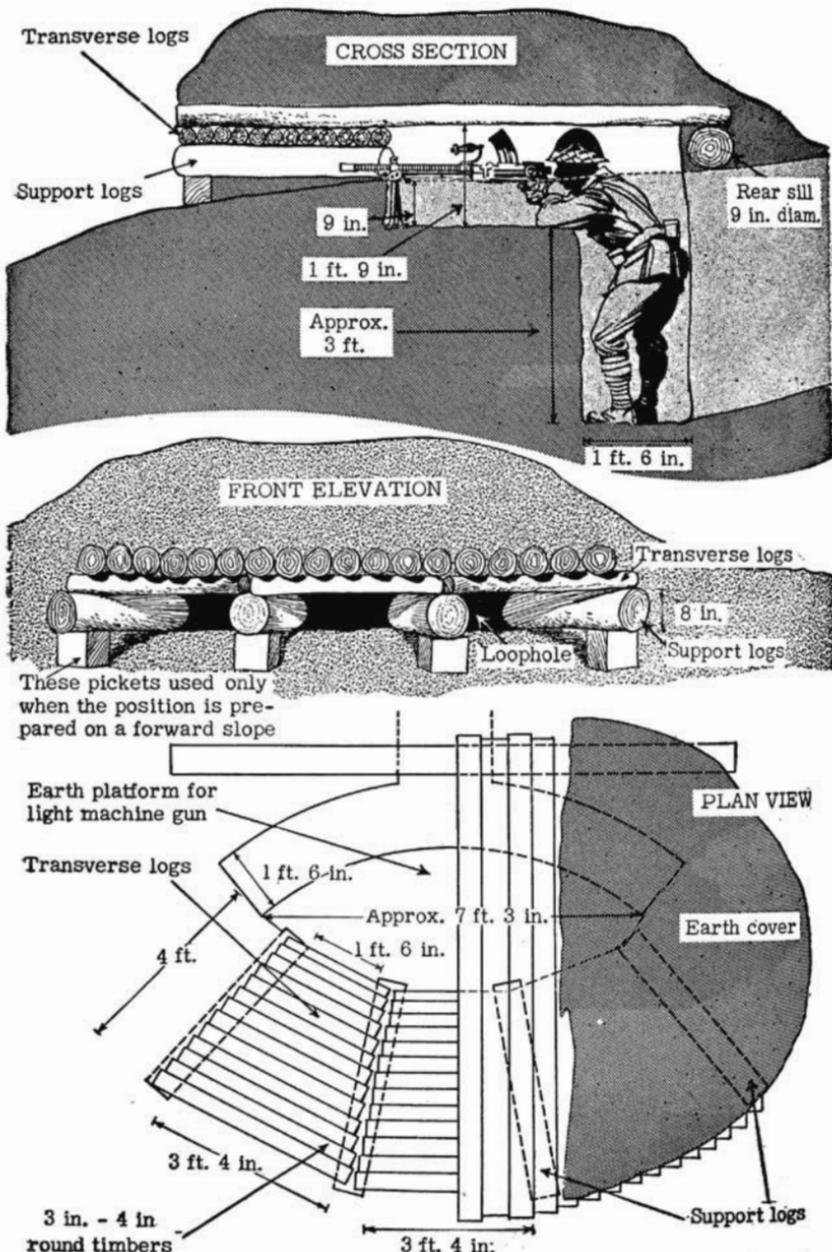


Figure 6. Japanese Three-bay Light-machine-gun Position in Burma.

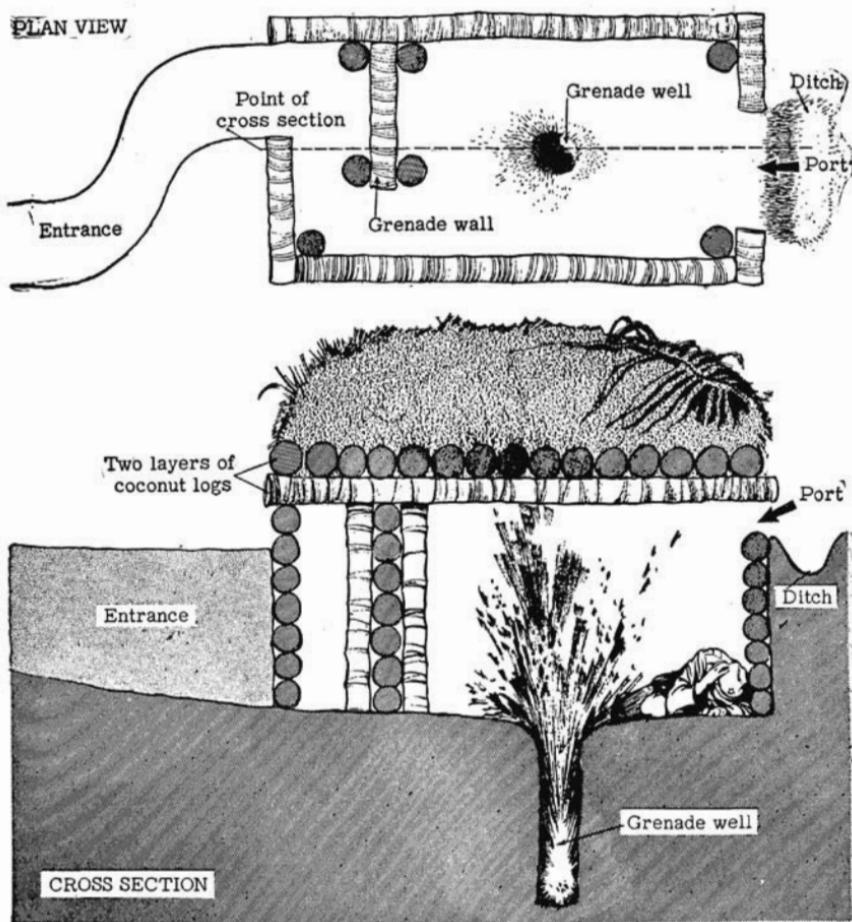


Figure 7. Japanese Fortification with a Grenade Well.

there by a judicious kick. If the grenade explodes in the well, it is much less likely to injure the occupants of the fortification.

Another device, which protects the occupants of fortifications against rifle fire, as well as against hand grenades, is a

protective wall erected just inside the structure, facing the entrance. In most cases such walls are designed to form a corridor leading into the shelter.

Often a small ditch is prepared in front of the firing ports of Japanese fortifications. The purpose of such a ditch is to prevent the earth dislodged by exploding shells and bombs from obstructing the port. Instead of piling up in front of the port, the debris and dirt fall into the ditch.

MODEL 100 GRENADE LAUNCHER PRODUCED IN TWO TYPES

Investigation has revealed that there are two types of the Japanese Model 100 (1940) grenade launcher. One is for the 6.5-mm Model 38 (1905) rifle and carbine; the other is for the 7.7-mm Model 99 (1939) rifle. Both launchers are remarkably similar, and both are intended to fire the smooth-sided Model 99 hand grenade, Type A (first found on Kiska Island and now generally known as the "Kiska grenade"). They also can be used on the U. S. carbine M1. A Japanese manual says that the purpose of the launchers is to provide a means of projecting the Model 99 grenade, Type A, further than it can be thrown by hand. The launchers, which are fitted to rifles and carbines after bayonets have been fixed, are intended for use in close combat.

While it is believed that the launchers can be used interchangeably on either the Model 38 or Model 99 rifles, and on the Model 38 carbine, the Japanese have introduced certain differences between the two models of launcher, to permit quick identification. The thickness of the bullet escape-tube wall is greater in the launcher for the 7.7-mm Model 99 rifle, and the diameter of the interior of the tube for the Model 99 is 9.7-mm instead of 8.5-mm. Exterior features facilitating recognition include the locking pin.

The launcher for the 6.5-mm Model 38 rifle and carbine has

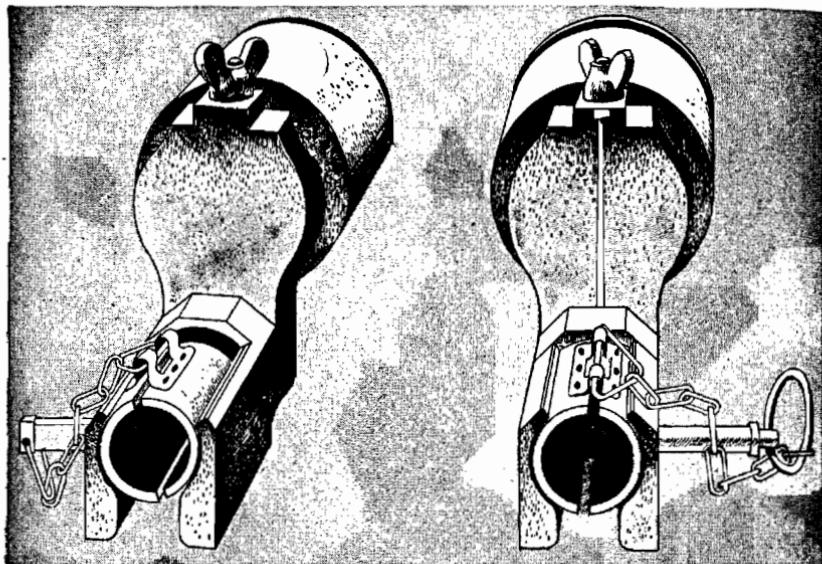


Figure 8. These are the two types of the Model 100 (1940) grenade launcher. At the left is the launcher for the 6.5-mm Model 38 (1905) rifle and carbine. At the right is the launcher for the 7.7-mm Model 99 (1939) rifle.

a triangular locking-pin ring, and the pin is introduced from the operator's left side. The launcher for the 7.7-mm Model 99 rifle has a circular locking-pin ring, and the locking pin is pushed in from the right. Probably the most obvious difference is that the vertical sighting line on the back of the launcher for the 7.7-mm Model 99 rifle is not found on the launcher for the Model 38 6.5-mm rifle and carbine.

It should be noted that the launchers are attached only when bayonets have been fixed. First, the locking clamp is attached to the muzzle of the rifle or carbine. A Model 100 launcher is

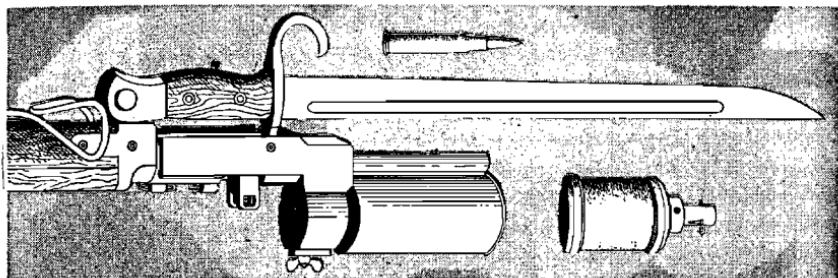


Figure 9. This drawing shows the Model 100 (1940) grenade launcher in position. This is the type for the Model 99 (1939) rifle. A Model 99 grenade, Type A, is illustrated here.

then slid over the locking clamp, with the cup upward and the bullet-escape tube in front of the rifle muzzle. When the launcher is in place, the spring clamp holds it to the rifle. The locking pin is pushed in so that it passes behind the rear of the bayonet handguard, and automatically locks the launcher in place. The cleaning rod need not be removed.

To fire, the butt of the rifle is placed on the ground after a live round of ball ammunition has been placed in the chamber of the rifle and a grenade loaded. The grenade itself is placed cap downward in the tube after the safety pin through the cap has been removed. Since the fuze of the grenade takes only a short time to burn, the barrel must not be elevated more than 40 degrees in the case of rifles, or 30 degrees in the case of the 6.6-mm Model 38 carbine. Greater elevation will result in an air burst. When the rifle is fired, the bullet passes out the muzzle into the escape tube. While the bullet is passing through the escape tube, gas from the cartridge flows up into the grenade discharger cup and expels the grenade.

Ranges are as follows:

6.5-mm M38 (1905) rifle (at 40 degrees elevation)—82 yards

6.5-mm M38 (1905) carbine (at 30 degrees)—109 yards

7.7-mm M99 (1939) rifle (at 40 degrees)—104 yards.

The grenades turn end over end in flight, both grenade and smoke from the fuze being visible. Air bursts over 10 feet high are believed to result in very little injury. On the ground, the danger area appears to be about 5 yards. The grenade will explode in the sea, sending up a 20-foot column of water.

It is important that the bullet-escape tube be kept free of dirt and rust. The Japanese warn against using the rifle for ordinary fire while the launcher is attached.

IN BRIEF

VARIATION OF THE "KISKA" GRENADE

The Model 99 (b) (1939) grenade is a newly found variation of the Model 99 (1939) "Kiska" hand grenade.

Like Model 99, the variation was designed for use, offensively, by advancing troops. It is sufficiently light to be thrown far enough, even by the short-limbed Japanese, to render waiting under cover for the explosion unnecessary. They may continue the advance after throwing.

Model 99 (b) consists of casing, bursting charge, and fuze. Its total weight is 9.63 ounces, of which 1.93 ounces constitute the picric-acid bursting charge, pressed with a central recess for powder train and booster. The following tabulation shows a comparison of Model 99 (b) with Model 97 (which it was designed to replace) and the German egg grenade:

<i>Grenade</i>	<i>Total Weight</i>	<i>Explosive Weight</i>
German egg type (<i>Eierhandgranate 39</i>)	12 oz.	3 oz. (approx.)
Model 97 (Japanese).....	16 oz.	2 oz. (approx.)
Model 99 (b)	9.63 oz.	1.93 oz.

This last grenade, like the Model 99, has a smooth, cast iron, cylindrical casing. Unlike the Model 99, however, it has no flange at either top or bottom, and is fitted with a friction igniter.

The fuze consists of a cast-iron fuze body, friction igniter, fuze cover, powder train, booster cap, washer, and locking ring.

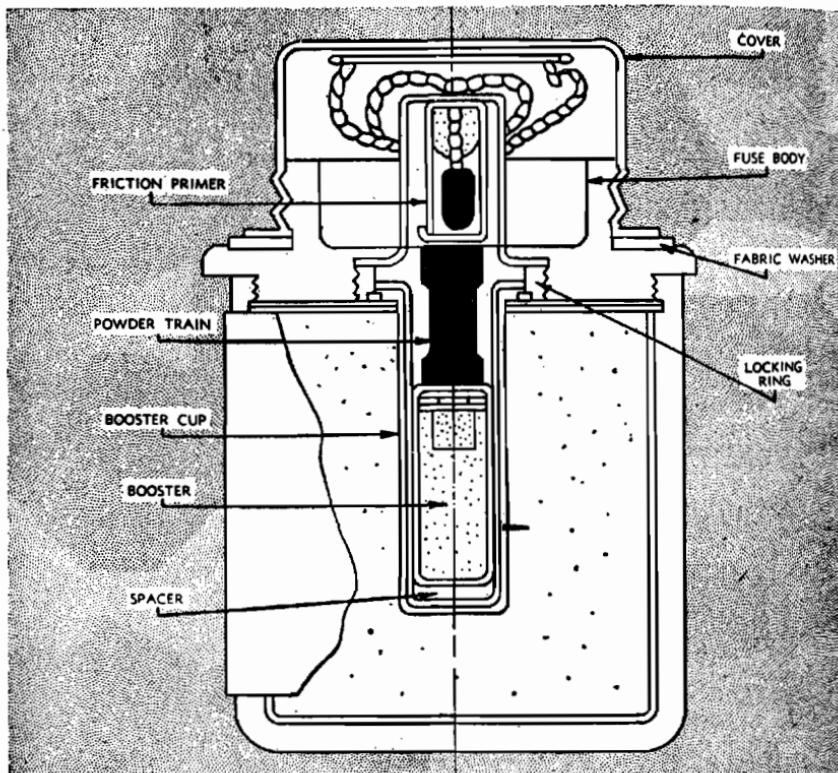


Figure 10. Japanese Model 99 (b) (1939) Hand Grenade.

The fuze body is assembled to the grenade by screw threads, and serves as a cover.

The friction igniter consists of an aluminum tube, pull cord, ring, igniter compound, and friction compound. When the pull cord is withdrawn from the igniter body, friction causes a flash, igniting the powder train.

The delay is approximately 4 seconds.

To throw, the cover is removed, and the ring attached to the

pull cord is placed over a finger. The ring and pull cord are left on the hand after throwing.

This grenade may be used as a booby trap by arranging the pull cord as a trip wire, or as a land mine by attaching a long length of cord and detonating from behind cover.

If the grenade is not used after it has been made ready, the pull cord and cover should be replaced. Any tension on the pull cord may ignite the explosive train.

It is believed that the Model 99 (b) cannot be fired from a grenade launcher.

JAPANESE ENGINEER REGIMENT

The Japanese Army Engineer, adept in the use of local materials and hand tools, is able to build simple military works sufficient for the requirements of combat troops. Although he is not mechanically minded, he is well trained in improvisation, and in the past has demonstrated a definite ability along this line.

The standard Japanese division engineer regiment of 850 men is commanded by a lieutenant colonel and consists of three engineer companies and a field supply company. Under certain circumstances one of the engineer companies may be replaced by a materials company equipped to supply needed materials for specific missions. The engineer company consists of three platoons of four 11-man sections each. The men are armed with rifles and there are two light machine guns in the company headquarters. The regiment is equipped with 12 flame throwers.

The regimental engineering equipment consists chiefly of hand tools, although a power saw and a pile driver may have been added recently as standard equipment. When the unit is operating in a rear area, it may be reinforced for labor by in-

fantry or labor troops, or by civilian workers. It is possible that it also may be equipped temporarily with some bulldozers and other road equipment.

The regular bridging equipment carried by the regiment is nothing more than steel cables, nails, clamps, and wire. Much use is made of trees and bamboo found growing in the operational area. Sometimes pontons are provided for certain operations, but engineer troops are instructed to make the most use of what local craft can be captured. The land transport equipment of the unit varies according to the theater or terrain in which the division is currently operating.

Although the primary missions of the division engineer regiment are road and bridge construction, demolitions, and mine removal, the personnel are trained for special operations and suicide missions, and sometimes are used for these purposes. Infiltration parties sent out to attack and demolish Allied artillery emplacements are often drawn from the engineers. In anticipation of the American attack on Biak Island, the Japanese commander there ordered his engineer troops to "prepare for explosive warfare."

SIGNIFICANT SIGNS

When operating in unfamiliar terrain, the Japanese send out small reconnaissance units far in advance of the main body, usually under the command of an officer. Such a unit selects the route to be followed and marks it with signs, usually written on message blanks. The Japanese characters on these signs always mention a unit and indicate the route it is to follow, with an arrow showing the direction. The signs often are found at trail junctions.

Throughout the entire Aitape operation, this was a common Japanese practice. As early as 15 May 1944, such signs were found by our patrols at the mouth of the Dandriwad and Dandanain Rivers and on several inland trails. At the conclusion of operations in the Afua area, the Japanese again employed these signs to indicate assembly areas of various units and the routes of withdrawal.

These little scraps of paper can be very useful sources of information. All patrols should be instructed to bring back all such documents, giving the location where they were found by grid coordinates, the direction of the arrows, and a brief description of the surroundings.



GERMANY



A German prisoner, a Panzer Grenadier who had spent 16 weeks at Cassino, told his British interrogators that, in his opinion, Allied soldiers had made a number of outstanding mistakes in combat. He discussed these in some detail, and, while his views are not necessarily endorsed, they are worth examining as an indication of how some enemy troops may expect us to fight in the future. On the other hand, this same prisoner's battalion commander, addressing his company officers on the subject of the battalion's performance in battle, analyzed the unit's shortcomings in forthright language. The comments of these two men are specially interesting when read in sequence.

COMMENTS ON ALLIED METHODS

"Allied infantry attack very cautiously and bunch up too much when they move against their objectives," the Panzer Grenadier said. "They are very negligent about seeking concealment, and therefore can be seen most of the time. When they move against their objectives, their lines are not staggered enough and are deep instead of wide.

"Allied soldiers on the double, upon coming to a sudden halt, frequently remain in a kneeling position, simply waiting to be

shot at, instead of throwing themselves to the ground. Then, if nothing happens, they get up on the same spot where they were kneeling before, and continue their advance. I think this is extremely dangerous, especially when the terrain is dotted with snipers, as it is in Italy. I myself have seen at least a dozen Allied soldiers die because of this stupidity.



“Allied soldiers on the double, upon coming to a sudden halt, frequently remain in a kneeling position, simply waiting to be shot at.”

“In the German Army we think it is only common sense for an attacking soldier to select an objective for each phase of his advance. Upon reaching an objective, he immediately throws himself to the ground and crawls 10 to 15 yards to the left or right, carefully avoiding observation. He waits there a few seconds before continuing his advance.

“Sometimes, however, the Allied infantryman will drop after a shot has been fired and will roll to the right. We Germans know this. We have also noticed that Allied infantry run toward their objectives in a straight line, forgetting to zigzag and thus making an excellent target.

"In Italy, especially, attacking forces can use rocks to better advantage than they do. While I was at Cori, there was a large space between two rock formations, which afforded a clear field of fire. We covered it with a light machine gun. The first Allied troops who tried to pass between the rocks moved very slowly and in line, and some of them were hit. Not until then did the others dash through the open space.

"Many Allied commanders lack aggressiveness. They do not realize when an objective can be taken; consequently, attacking troops often turn back just before they reach their objective.

"At Cassino I was in a valley with 97 other German soldiers in foxholes and slit trenches. First, a group of Sherman tanks attacked within range of our *Faustpatronen*. Three of the tanks were knocked out. The infantry, who should have followed right behind the tanks, were about 500 yards behind, and therefore were too far away to seek the cover of the armored vehicles. The tanks immediately retreated. When the infantrymen saw that the tanks had turned around, they, too, turned around and retreated. The whole valley should have been cleaned up in a matter of minutes.

"This great distance between Allied armored units and infantry was apparent almost every time. There was one instance when Allied tanks smashed across our foxholes, to be followed an hour later by infantrymen, who were driven back by a hail of machine-gun fire. *We Germans rely on you to make these mistakes.*

"The net cover on the helmets of Allied soldiers permits us to see the outline of the helmet distinctly, and at a considerable distance, in the daytime," the German soldier concluded. "On the other hand, the camouflage that we [Germans] use on our

helmets disrupts the outline of the helmet, and the canvas cover can be painted to suit the terrain."

COMMENTS ON GERMAN METHODS

"Defense, with its digging-in and long hours of lying in wait, is contrary to the nature of the German soldier," the German battalion commander told his officers. "Every company commander must emphasize to his men repeatedly that the life of a whole company depends on the alertness of a single soldier. We must be prepared for new dirty tricks on the Allies' part every day.

"I do not want to hear soldiers complain that they have not eaten or slept for two days and that the situation is impossible. The word 'impossible' must not exist in our vocabulary.

"Principally because of its monotony, observation has become very poor. The slightest movement of bushes must be reported. Remember that trifles may be pieced together at higher headquarters to form a significant picture. Even negative reports may be of the utmost importance. I have been noticing that our observers do not use camouflage, and that, when they do, it usually does not match the terrain. As a result, the observer stands out like a flag. The companies seem to do their utmost to tell all their actions to the enemy. In short, camouflage discipline is poor.

"Again and again, it has been evident that our soldiers consider the night their enemy. Most of our men are completely helpless at night.

"The Allies are using the night for much of their activity, and have achieved a great deal of success. I have noticed that they use their machine-gun fire very effectively at night. They can

place their machine-gun fire 10 to 20 centimeters above the top of our foxholes, so that even at night our men don't dare to stick their heads up.

"Our soldiers have learned the same tactics, but are too lazy to prepare their weapons for night firing. Many of our soldiers have even adopted the idea that they mustn't fire at all. This can be traced back to the fact that the enemy, with his superiority in matériel, often has placed an artillery barrage on individual soldiers. If we want to bring the old spirit back, the soldiers must learn that their most important weapon is their shovel.

"Soldiers must prepare alternate positions. We must never fire from our main positions during daylight. It must not happen again that our men refrain from firing on Allied troops, giving as their excuse, 'We would only hit the sand.' It is the responsibility of the company commander to see that his company can be ready for action at an instant's notice. In the instance I have in mind, I don't believe that everybody was asleep, but, rather, that the proper system was not being followed.

"Our men are not well trained in patrolling. They always want to attack after a heavy artillery preparation. This is wrong. Creep up, Indian fashion, and arrive in the enemy's midst suddenly. It is now self-evident that machine-gun belts must be wrapped around the stomach, and that pay books and all papers must be left behind.

"Men must be trained to understand brief military orders. Our organization is poor. It is changed only after the enemy has taught us a lesson. The other day we lost a deserter. That this man is going to talk is obvious. He will at least have told the enemy the time and route our food carriers change. That



"Creep up, Indian fashion, and arrive in the enemy's midst suddenly." the enemy has acted on such information is proved by our losses. Why aren't the schedules changed from day to day? Ambulances do not arrive at the front fast enough. The other day they took three-quarters of an hour, and I understand that some of the wounded bled to death.

"Enemy penetration of our lines has occurred mainly because the gaps between companies have been too large. If the company on your left fails to maintain contact, you must in your own interest maintain contact to the left.

"Communications have been very poor. During a barrage, never send just *one* messenger. Because of Allied artillery fire, our line communications have been cut most of the time. Use of radio, instead, has been impossible because of the lack of radios. There are far too few messages. The junior officers never put themselves mentally in the position of the higher echelons. These echelons are mostly so far to the rear that they cannot be contacted. Every man, from privates up, must make it a habit to report as often as possible.

"The distribution of ammunition has been satisfactory, and our system of ammunition dumps has proved its worth."



G.I. Comments on German Use of Fire Power

As the war in Europe progresses, U. S. soldiers are becoming increasingly familiar with the ways in which the enemy employs his fire power; however, since each unit naturally has learned more lessons from its own experiences than from those of other outfits, a general pooling of information can be extremely helpful.

Most of the following comments on German use of fire power have been submitted by U. S. noncoms and company officers, and are based on fairly recent combat experiences in France and Italy.

Artillery in Support of Infantry

"The German basic force seemed to be infantry with heavy weapons, plus a heavy tank, a self-propelled gun, or some other single cannon. The enemy covered an attack by an impressive display of fire power over a wide front. He also attempted to move his base of fire by having a self-propelled gun or a tank accompany the infantry, who fired machine pistols as they advanced. In defense a single gun was used, but we destroyed so many that the Germans soon found this system wasteful. To gain control, they stayed in close columns very near the front, where we frequently surprised them.

"The chief drawbacks of German field artillery can be sum-

marized briefly as lack of mass, poor transport, poor lateral communication (especially between observation posts), slowness in occupying positions and preparing for massed fire, and reliance on single cannon, often very poorly sited, for support.

“When German delaying forces used cannon, they tended to select poor positions. Their high-velocity weapons had to occupy positions which we could discover easily. Their infantry howitzers were very poorly situated, either through ignorance or because of a desire to put the guns in a position from which their personnel could not escape and where they would have to fight to the last.

“On the other hand, we were impressed with the accuracy of German field artillery. I’ve seen a 150-mm battery concentration hit a crossroads so consistently that engineers had to be called on to make it passable for a 2½-ton truck. As far as thoroughness goes, the Germans get more out of a round than the devil himself gets on a lump of coal.”

Deceptive Fire of Machine Pistol

“The German machine pistol—a submachine gun, in U.S. terminology—is very deceptive when heard in combat. We call it the ‘zipper gun.’ It can be fired almost on top of you and yet sound far away, and vice versa. The reason for this is that there is a gadget on the barrel which enables the operator to muffle the sound of firing. Our men know that this gun is not highly accurate, but, because of the high rate of fire and the sound, it’s a fairly harassing weapon.”

“The first bursts that the machine pistol delivers are effective.

The rest have a tendency to go high and to the right. Because of this, new troops sometimes think that they are being fired on by more weapons than are actually in operation. A favorite German trick is to fire a single round from the machine pistol, move to another spot and deliver automatic fire, and then move again to fire a single round."

Pearranged Fire on Approaches

"When the Germans expected us to attempt an advance, they would zero in on all the avenues of approach that we might reasonably be expected to use. Then they would plant snipers at strategic points. When we attacked, the snipers would open up immediately, in an effort to pin us down into a compact group. If this tactic succeeded, the enemy would let loose with mortars or 88's, which already had been zeroed in. The Germans especially favored this method in hilly terrain, where we did not have a wide choice of attack routes.

"The Germans seldom defended low ground. They almost invariably intrenched themselves in high ground, where they would have good observation."

Artillery Fire Control

"In our experience, German artillery fired only on targets of importance, except in the case of a diversionary attack, when firing at random seemed to be the general practice. The Germans fired according to the amount of ammunition they had on hand. To conserve ammunition for their larger guns, they would couple one of these guns with a light gun, and would try to ob-

tain the range by using the lighter piece. (However, by using smoke, we were able to thwart these efforts at range estimation.) The Germans invariably used only one destructive weapon against a target. When they were hard-pressed and were about to withdraw from a position, their artillery would fire a heavy barrage, lasting as long as half an hour, on the whole front or area. This barrage would be heavier than in the case of an actual attack."

"Our unit found that the Germans nearly always fired a smoke shell during the daytime, to get the range for their artillery. At night they would move a machine-gun squad close up to the line, and fire tracer over a certain point; by this method the observation post could determine the range for artillery at night.

"At first the Germans used only two men to a machine-gun nest, but later on they began to use three men. The third man would stay hidden in case there should be an Allied attempt to take the machine-gun nest. If such an attempt was made, the two German soldiers who were visible would walk out in front of the machine-gun nest, holding up their hands to be searched. When Allied soldiers were engaged in the searching process, the two Germans suddenly would drop to the ground, and the third German, concealed in the machine-gun position, would start firing.

"When the enemy was driven out of a town or village, he would leave an observation post in a church tower or some other place where there was a large bell. As our troops entered the village, the observation-post personnel would ring the bell, and



"The two Germans suddenly would drop to the ground, and the third German, concealed in the machine-gun position, would start firing."

German artillery, having zeroed in previously, would fire as soon as the bell rang."

Use of Tanks

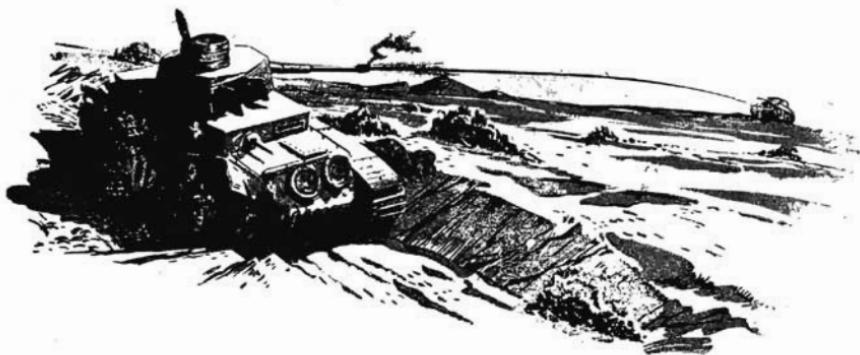
"I never saw a German tank employed singly. In nearly all instances, a section or a platoon was employed. One tank may try to draw your fire; then, if you react as the Germans expect you to, you are immediately subjected to the remainder of their fire power.

"German tanks have a tendency to bunch up, and it is quite common for them to expose their broadsides. We found them vulnerable to cross fire from fire power employed on an extended front."

"I found that the enemy employs his tanks in groups of six or more, and that there usually are two or three types in a group. The most common, we found, were the *Pz. Kpfw. VI*, the *Pz. Kpfw. IV*, and, in most cases, one or two self-propelled guns.

These guns, I believe, are intended to delay our advance in the event that the tanks have to withdraw or maneuver to a more advantageous position. The Germans frequently use a single tank as a decoy to draw your fire, with the hope that you will present yourself as a more vulnerable target. The enemy's main fault, it seems to me, is bunching up his vehicles and trying to get too much through a single avenue of approach or withdrawal."

"If a German tank is not completely destroyed—set afire with high-explosive shells, for example—the enemy is likely to sneak back into it and deliver unexpected fire from its weapons. Also, a crew bailing out may leave a man behind to cause us trouble. Once, we fired on a *Pz. Kpfw. IV* Special, and hit it in the track. The crew bailed out immediately, and we thought the tank was out of action. However, the gunner remained in the vehicle. After we had stopped watching this particular tank, the gunner fired two rounds at us. We weren't hit, fortunately, and lost no time at all in demolishing the tank."



"The crew bailed out immediately, and we thought the tank was out of action. However, the gunner remained in the vehicle. After we had stopped watching this particular tank, the gunner fired two rounds at us."

Antitank Guns

“The Germans have been introducing more and more 57-mm antitank guns, usually emplaced in pairs. The positions are likely to be just below the crest of a hill or a high bank. From the positions of the guns, it is evident that the crews plan to let our armor come well within range, and then take them under a cross fire. The emplacements are always well dug-in and camouflaged. Invariably there is a crawl trench leading from the gun itself to a dugout, which serves as living quarters for the crew. After the gun has been hit, surviving members of the crew move down these trenches and out of observation.”

Machine-gun Fire

“Our men have learned how to get around the fast-shooting German light machine guns. These guns have such a rapid rate of fire that they are not able to cover a great deal of ground. When our men have stayed well apart, the machine guns have not been able to do much damage. Actually, these weapons are terrific ammunition wasters. And our men have learned how to take advantage of the few moments afforded when the crew must change barrels. This happens frequently because of the high rate of fire. What ground the light machine guns cover is covered well, but it's a very limited area.”

“Double rows of German base fire, at night, involved a heavy unidentified line of fire approximately 3 feet from the ground, and a high, arching line of fire, amply identified by tracer bullets. Evidently the Germans hoped to create the impression that the principal fire was high and inaccurate, and also to discourage night bayonet attacks.”

THE S-MINE 44 AND ITS IGNITER

The S-mine 44 is similar in appearance to the well known S-mine 35, and has the same dimensions. The main external difference is that the 44 igniter is not in the center, but is offset to one side. Like the S-mine 35, the new version can be actuated either by a push-igniter or by a pull-igniter. A pressure of 21 pounds, or a pull of 14 pounds, will actuate the mine.

Like the S-mine 35, this new mine has an inner body which is projected into the air by a small propelling charge. Unlike the S-mine 35, however, detonation in the air takes place as soon as a cord, attached at one end to the bottom of the outer casing (and coiled therein) and to a pull igniter in the inner body at the other, reaches its full length of 33 inches. The net effect of this improvement is to eliminate the somewhat unpredictable height of burst inherent in the design of the S-mine 35, and to ensure a bursting height of approximately 30 inches.

After activation, there is a delay of 4½ seconds before the propellant (1.06 ounces of black powder) is ignited. With the bursting charge of loose TNT, a bursting radius of 110 yards and a lethal radius of 22 yards are claimed.

As a rule, a new type of igniter, the *S-Minenzünder 44*, is furnished for use with this mine. The igniter consists of a tube which screws into the igniter socket in the top of the mine. The tube contains the striker and the striker spring. At the top of the striker shaft, where it protrudes through the striker housing,

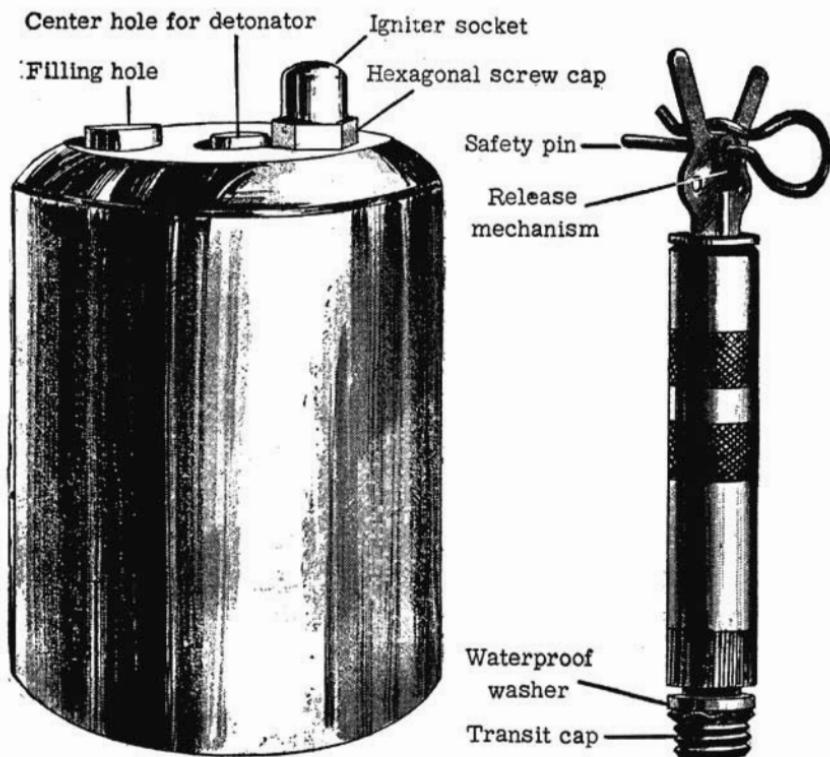


Figure 11. The S-mine 44 and its Igniter.

is a disc. The release mechanism consists of two independent slotted levers which hold the disc—and hence the striker—in the cocked position. In the unarmed position these levers are held immobilized by the safety pin. In the armed position, however, they are held between the disc and the striker housing only by the tension of the striker spring. If these levers are displaced, either by pressure or by lateral pull on the trip wires which may be attached to one or both, the striker is released and is driven forward by the spring.

The S-mine 44 is laid with the safety pin flush with the ground. After the mine has been laid, the pin is withdrawn from a safe distance by means of a draw string. If trip wires are used, they may not exceed a length of 22 yards.

Personnel authorized to disarm this mine should cautiously replace the safety pin in its coincident holes in the two trip levers. Next, the igniter is unscrewed from the body of the mine, and is removed. The detonator then may be removed from the center well, rendering the mine safe.

A TANK-INFANTRY TEAM OBSERVED IN COMBAT

For a period of 36 hours in the last days of July, an officer of an Allied army group staff had an excellent opportunity of observing German tanks and infantry attacking an Allied force in France. The following notes, which are based on his report, describe the tactics that the Germans employed.

The general situation was fluid at the time of the attack. The Germans advanced westward in three parallel columns, each consisting of tanks accompanied by infantry. The center column followed a main road, firing rapidly and moving at a brisk rate. It went from hill to hill, with the accompanying infantry dog-trotting through the fields on each side of the road and over the hedgerows. The infantry was deployed over no more than the width of a single field on each side. The center column had a total of only about eight track-laying vehicles. At least three of these were tanks, one or two probably were self-propelled guns, and the remainder probably were half-track personnel carriers.

Although the total German strength which had been sent to capture and hold an important crossroads at St. Denisière consisted of two companies of infantry and probably not more than ten tanks, the Allied officer observed only the track-laying vehicles previously mentioned and possibly a platoon of infantry.

The Infantrymen Moved Fast

The leading tank fired its 75 rapidly, getting both graze and air bursts, while its machine guns, supplemented by those of the vehicles behind it, sprayed the top of every hedgerow. The noise was terrific, and the bursts in the shrubbery and the tops of trees and hedgerows were certainly impressive. Even before the shock of the guns discharged at close range, and the garden-hose spray of machine-gun bullets, had taken full effect, German infantrymen were over the hedgerow and into the field and were advancing toward the next field with determination and courage. They knew where they were going, and went there fast.

At night the Germans reacted forcefully, with fire and limited movement, whenever they detected any sign of an Allied approach. The German tanks moved slowly, and made very little noise. Immediately after firing, each tank moved to a new position 25 to 50 yards away. It should be emphasized that the noise discipline of the German tank crews and the accompanying infantry was superior. There was no talking or shouting; except for machine-gun and cannon fire and the starting of motor, no sound carried farther than 100 yards.

On the other hand, the approach of U. S. tanks and the passing of most U. S. motor convoys was rapidly identifiable by the loud shouting, talking, and issuing of orders by the U. S. troops who approached or passed the general vicinity of a German position. The propensity of U. S. tank drivers to "gun" their motors was a dead give-away, whereas the Germans always eased their tanks forward, traveled in low gear, and were remarkably quiet in all operations except the firing. They used long bursts of their rapid-firing machine guns to discourage guests. If pressed at all, they sent up flares to obtain German

artillery and mortar fire on their flanks. The way they handled their tanks was bold and sure. They acted as if they knew exactly what their destination was, and by which route they wished to proceed.

A U. S. Tank "Got the Works"

At 0230, the darkest part of the night, a German tank moved out and headed toward the northernmost German column, making as little noise as possible. Later it turned out that a lone U. S. tank on reconnaissance had pushed up against the nose of the ridge that the German tanks had organized, and the Germans were quietly laying plans to place a terrific amount of fire on it. Before long, it got the works.

Because there were so few German infantrymen, and because they were interested only in reaching and holding the team's objective, their mopping-up activities were negligible. Thus, of the Allied troops overrun in this fashion, a large percentage was neither killed, wounded, captured, or missing during the first two or three days. The ease and rapidity with which this small attacking force made its penetration, reached its objective, sat on the objective, and cut traffic on an important road is of more than ordinary interest. Also, it is reasonable to assume that the Germans will employ small groups for similar missions in the future.

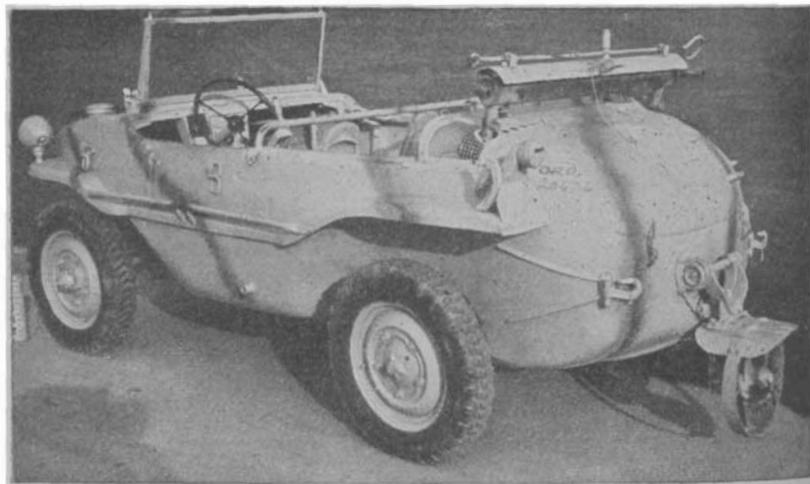
German Light Amphibious Car



The German light amphibious car, which resembles a small civilian sports car and has a boat-shaped open body, is highly maneuverable. The Germans call this vehicle a *Schwimmwagen*, literally enough, while on the Allied side it sometimes is spoken of as an amphibious *Volkswagen*. The light amphibious car represents a development of the original *Volkswagen* ("People's Car"), a light civilian vehicle that Hitler once promised to manufacture in huge quantities and bragged about as one of the future blessings of German National Socialism.

The light amphibious car has the following dimensions:

Over-all length (with propulsion unit in land-travel position)	11 ft. 8 in.
Over-all width	4 ft. 10 in.
Over-all height (with top up)	5 ft. 2 in.
Tread width, center line to center line	4 ft.
Wheel base	78 in.
Ground clearance (unloaded)	11.5 in.
Approx. depth of immersion when float- ing	2 ft. 6 in.
Freeboard (loaded)	13 in.



The German Light Amphibious Car.

The following details have been obtained from a manufacturer's plate in the engine compartment of a car which was examined recently:

Type	166
Pay load	958 lb.
Weight empty	2,002 lb.
Permissible axle load (front)	1,190 lb.
Permissible axle load (rear)	1,775 lb.
Permissible total weight	2,965 lb.
Engine capacity	1,131 cc.

This specimen was fitted with "run-flat" tires, size 7.85 by 16.

The engine is of the 4-stroke, 4-cylinder, horizontally-opposed, air-cooled type, similar to that of the ordinary *Volkswagen*, Model 82, and has a capacity of 1,131 cc. When the car is afloat, the crankshaft leading through the back of the vehicle effects the propulsion. The crankshaft ends in teeth which form a dog-clutch, which engages either with the propeller drive, when the latter is in position, or with the starter handle.

There are four forward gears, and one reverse, and also an auxiliary lever for a low gear for cross-country driving and for engaging or disengaging the 4-wheel drive. When the auxiliary lever is in the forward (cross-country) position, gear must not be changed, according to a warning notice on the instrument panel.

For starting under winter conditions, a specially volatile starting fuel is used. This is contained in a small auxiliary fuel tank with a capacity of about 1 liter, connected by a synthetic rubber tube to the fuel pump. This auxiliary tank is situated in the engine compartment, which is in the rear of the vehicle.

The cooling-fan intake is between the two rear seats. A transverse exhaust silencer is mounted over the engine compartment, and discharges on both sides. The body is of pressed steel with welded seams. The shaft entrances are made watertight by corrugated rubber tubing. An independent torsion-bar suspension is employed on each of the front wheels.

When the three-blade propeller unit is not in use, it folds over the back of the vehicle. This unit is provided with a chain drive to a sprocket, the shaft of which is provided with teeth which engage with those on the crankshaft end. In water, as on land, steering is effected by the conventional steering wheel, which governs the front wheels of the vehicle. When the car is traveling through water, the transmission is neutral, and the accelerator regulates the speed.

The instrument panel is fitted with a switch for speedometer lighting, a charging indicator (red), an oil-pressure indicator lamp (green), a plug for the inspection lamp, a speedometer, and a combined lamp-and-ignition switch. Beneath the instrument panel are a gasoline filter, the auxiliary fuel pump, and a lever for operating the pump for one-shot lubrication.

The foot controls comprise (from left to right) a dimmer switch, clutch, foot brake, and accelerator.

The hand controls are the gear lever, a lever for putting the 4-wheel drive and the cross-country gear—or both—into operation, a small lever for operating the choke, and the hand-brake.

GERMAN ASSAULT ARTILLERY

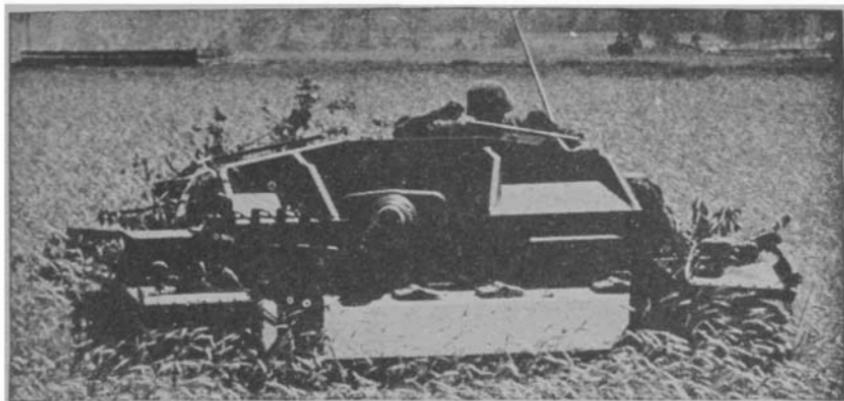


German assault guns, like tanks, are often fitted with 5-mm side armor plates designed to explode hollow-charge (bazooka) projectiles before they hit the main armor. These plates bolt on in sections on frames. On the march, they are stacked on the rear.

During the present war the Germans have been placing increasing emphasis on the class of weapon known as assault artillery. Consisting of assault guns and howitzers, assault artillery pieces should not be confused with other types of self-propelled guns, for each of the four types of German self-propelled guns has definite characteristics, and each follows prescribed tactics peculiar to its type. In contrast to assault artillery, self-propelled artillery provides indirect fire in the normal field artillery fashion, and is protected by open-top armored shields proof against only small-arms fire and shell fragments. Tank destroyers, which are armored like self-propelled artillery, are used by companies in counterattacking tank breakthroughs, each platoon concentrating on a single tank. Self-propelled infantry howitzers are also armored like self-propelled artillery; they are the infantry howitzers of armored infantry. Recent tank destroyers like the *Jagdpanther* have assault gun characteristics. However, *Jagdpanthers* are unique in that they fire only on long range targets.

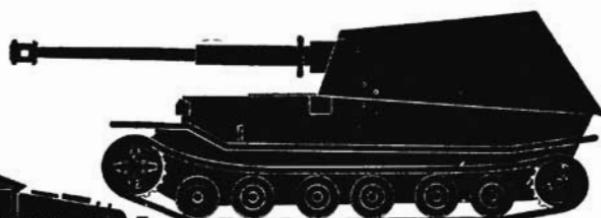


The most common type of assault gun is the 7.5-cm Sturmgeschütz 40 (above). It supersedes the original 75-mm assault gun 7.5-cm Sturmgeschütz, shown on the next page. The chief difference between the original and the present version is the high-velocity 75. The long 75 permits assault guns to combat tanks and also affords greater accuracy at longer ranges. Assault howitzers are designed after the same principles as assault guns. In fact, the 150-mm 10-cm Sturmhaubitze 42 looks just like the Stu.G. 40 above. Somewhat bigger is the 150-mm 15-cm Sturmpanzer 43 ("Grizzly Bear"). Assault howitzers are used in the same way as assault guns. The Nazis believe that their large shells have great effect on morale.



Assault guns are reserved for attacks and counterattacks. Their low silhouette permits them to move close behind the leading infantrymen, and yet retain a maximum of security against hostile observation and hits from hostile weapons. The first type of assault gun, which mounts a short 75-mm gun, is shown here.

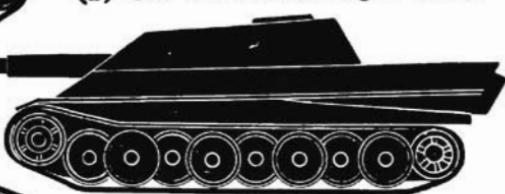
(a) 88-mm
"Elephant"
(right).



(b) Old 75-mm assault gun (left).



(c) 88-mm
Jagpanther (right).



(d) 75-mm
7.5-cm Sturmgeschütz 40
(left).

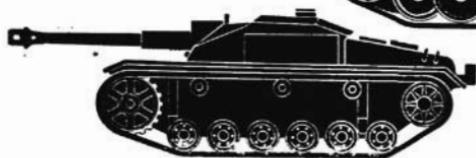




Figure 13. The present role of assault artillery is chiefly to provide strong artillery support in counterattacks. This map shows a typical German defensive position. The assault guns (17) are held in reserve in the wood near the battalion CP (10). The remaining installations are numbered as follows: minefields (1), machine-gun nests (2), tank obstacles (3), wire obstacles (4), company CP's (5), mortars (6), AT (7), AA (8), regimental CP (9), infantry howitzers (11), artillery (12), OP's (13), motor park (14), *Nebelwerfers* (15).



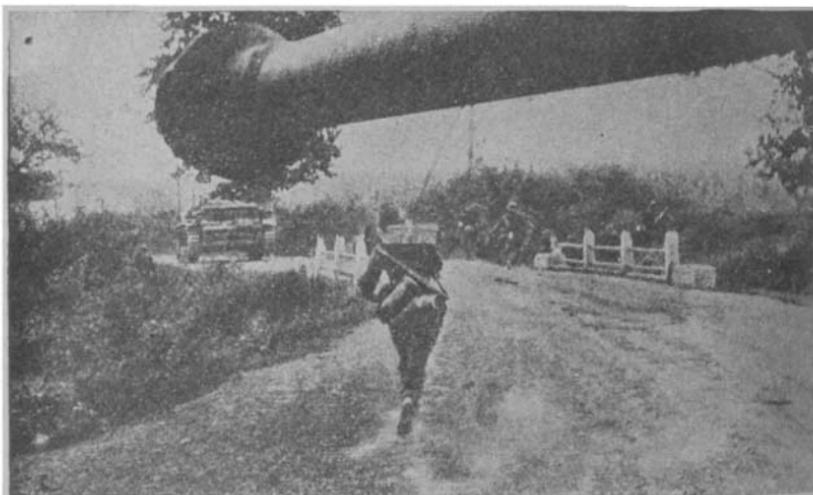
Whenever possible, assault guns are committed in mass at the point of main effort. They move forward so as to cross their line of departure simultaneously with the infantry. Assault guns on the march make good targets for aircraft seeking to attack with rockets.



In the attack, assault guns move in batteries, in extended order, with distances between vehicles varying according to visibility. They rely entirely on the infantry for protection, and try to stay near the infantry for whom they are furnishing support. Single guns operate under the orders of the nearest infantry commander, but the Germans stress the fact that batteries must be kept intact.



The battery commander works his battery by radio, and maintains liaison with the infantry. Since assault guns are supposed to draw the fire of hostile infantry-support weapons, German infantry is warned against taking cover behind them. But they do, nevertheless.



Assault guns advance rapidly with the attacking infantry. They are sited in the foremost positions, and seek to engage hostile infantry-support weapons, artillery, machine-gun nests, pillboxes, and bunkers.



The assault gun's job is to supplement, not to replace, ordinary infantry-support weapons. Here, the Germans are carrying out their doctrine correctly. German infantry is keeping clear of the assault gun, while the assault gun backs up the effort of the *Pak 38* in firing on targets which have been holding up the infantry advance.



Assault guns fire from concealed positions, whenever possible. They are not dug in, but may seek cover either beside or inside masonry walls, as illustrated above. An assault gun in the hotel in Cassino was most effective in supporting the "Green Devils" of the German 1st Parachute Division, who were defending the town.



In pursuit, most assault guns move with the advance guard of the advance detachment. Here they will be sited so as to deal with any weak resistance delaying the advance, and to combat tanks. However, assault guns are not regarded as reconnaissance vehicles. The Germans forbid their use as armored cars, or as accompanying support for patrols of whatever type. They are a shock weapon.



In the face of moderate resistance, infantry with light machine guns may ride on assault guns. These infantrymen dismount when fired on, and proceed to protect the gun from infantry attack. Assault guns unprotected by infantry are extremely vulnerable.



Assault guns form the backbone of units assigned to seize and defend commanding terrain features. Slit trenches are dug for the protection of personnel. The assault guns are never dug in, but remain ready to make the most of their characteristic mobility.



When withdrawal becomes necessary, assault guns are allotted to the commander of the rear guard. They normally travel with the foremost troops, but since they have only one exterior-mounted light machine gun, they continue to rely on infantry protection.



In the withdrawal, the task of assault guns is to hold off enemy infantry until German infantry has disengaged. Sections leapfrog back, covering each other. Orders for withdrawal are given over the radio by the liaison officer with the rear-guard commander.



In attacks on fortified towns and villages, assault guns advance by batteries. Their mission is to destroy the foremost houses.



After the infantry has broken into the edge of the town or village, the guns of a battery split up, and, by previous arrangement, join the various infantry-engineer assault groups and fight with them.



In village and street fighting, assault guns are considered most useful in breaking up road blocks, barricades, and fortified houses. Here an assault gun advances, after knocking out a gun defending a barricade of paving stones. Assault guns are also used to provide direct fire against the embrasures, and other vulnerable points, of fortified positions. In missions of this type, they work with infantry-engineer teams seeking to break into the hostile position. Assault guns were first used for this purpose in France.



In case of a major German breakthrough, assault guns are often withdrawn once open country has been reached and the danger of counter-attack has passed. They regroup in mass, while the job of pursuing the enemy and exploiting the breakthrough is taken over by tanks belonging to armored divisions. When tanks encounter difficult infantry-defended terrain or fortified positions, the assault guns are again brought forward into combat.

DUMMY TANKS

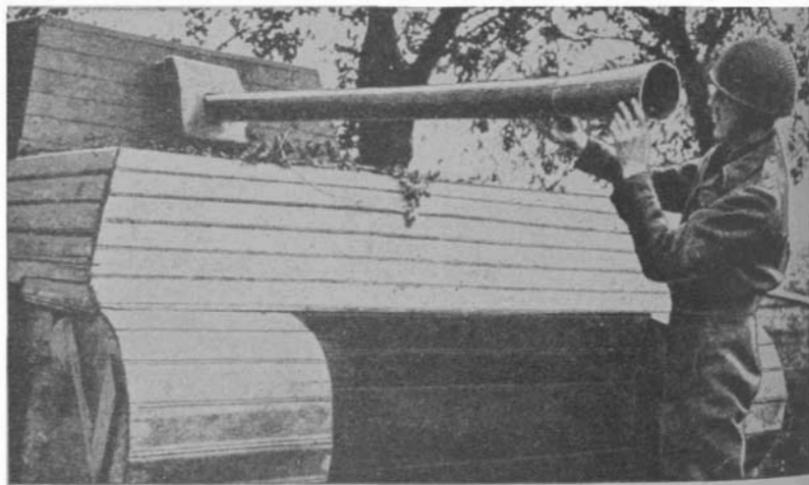
Although German use of dummy tanks in France and Italy has not been extensive, such instances as have been reported make it clear that the enemy is capable of imaginative work along this line. For example, a typical enemy procedure is to site dummy tanks and real antitank guns in such a manner, with respect to the terrain, that Allied tanks maneuvering to engage the dummies will present enfilade targets to the German antitank guns.

It is believed that there are no standard German dummy tanks, and that local improvisation is the rule. The reproductions have been sufficiently accurate to look like the real thing when observed from a distance, but have been fairly easy to detect at close range.

Eight non-mobile dummy tanks discovered behind the Adolf Hitler Line in Italy were particularly notable for the realism of their gun barrels, which had been constructed from telephone poles, with a recoil mechanism of stiff cardboard and a shield at the point of entry to the turret. However, the general construction of these dummies was by no means elaborate; for the most part, the Germans simply had used scrap lumber covered with tar paper. The turrets were of plywood, but no makers' plates, numbers, or other identification marks appeared on them; evidently the turrets, too, were of local manufacture.



German Dummy Panther Tank.



Close-up of Dummy Panther Tank.

The dummy tank shown in the photographs on page 76 was encountered in France, and is a much better job. In the locality in which this specimen was found, all the dummy tanks had wooden frameworks, but were covered with different materials, such as sheet metal, canvas, or wood. The guns on the turrets were lengths of thin-gauge stove piping joined together. One specimen had a gun made from a felled sapling. Evidently these tanks had been prepared in sections, so that they could be transported to tactically suitable points, and assembled there.

PROTECTIVE MEASURES AGAINST SHELLFIRE

Recognizing the tremendous effectiveness of Allied artillery fire, the commander of a Panzer division in Italy issued instructions designed to correct at least some of his unit's weaknesses. "It has become apparent that we still lack toughness under artillery fire," he said. He acknowledged the strength of the fire his unit had been receiving, and made the candid admission that there was very little that the division could do about it by way of retaliation. He pointed out to his men, however, that they could endure even heavier artillery fire without losses if they conducted themselves precisely according to his instructions. The commander emphasized the value of what he called "passive measures," and especially recommended the following:

1. The first step in digging was to prepare narrow, deep excavations for personnel, weapons, and ammunition. Next, connecting trenches, permitting movement to the nearest cover, were to be prepared. Further intrenching was to be undertaken, as time permitted.

2. All trenches, ditches, dugouts, and other instances of digging were to be camouflaged. Special care was to be taken to

avoid creating small, temporary paths. Existing roads were to be used, and no new vehicle routes were to be established.

3. The preparation of alternate positions, which could be reached under cover whenever possible, was to be expedited.

4. Personnel were to refrain from moving about, unless movement was absolutely essential to the performance of a mission. Every activity was to be conducted under cover, or under camouflage.

5. Air observation and the air-raid-alarm systems were to be maintained; in addition, personnel were to "freeze" when hostile aircraft approached.

6. Certain essential fire missions and combat activities were to be carried out, however, during the alert or just before the beginning of a main Allied attack. Machine guns, roving guns, and other weapons were to undertake such activities from alternate positions, rather than from the principal defenses. During the attack itself, personnel were not to reveal the location of a main position by opening fire. They were to let hostile forces advance, in order to bring them under fire more effectively.

7. When about to change positions, personnel were to attempt to deceive hostile artillery by means of a few bursts of fire. As a result, it was to be hoped, only empty positions would receive the retaliatory fire.

MACHINE-GUN TRICK

A U. S. staff sergeant, who served as an observer for a mortar section in the Normandy campaign, reports an unusual German method of firing a machine gun by remote control. Although this method has not been reported by other U. S. soldiers, and although no concrete evidence as to its effectiveness can be

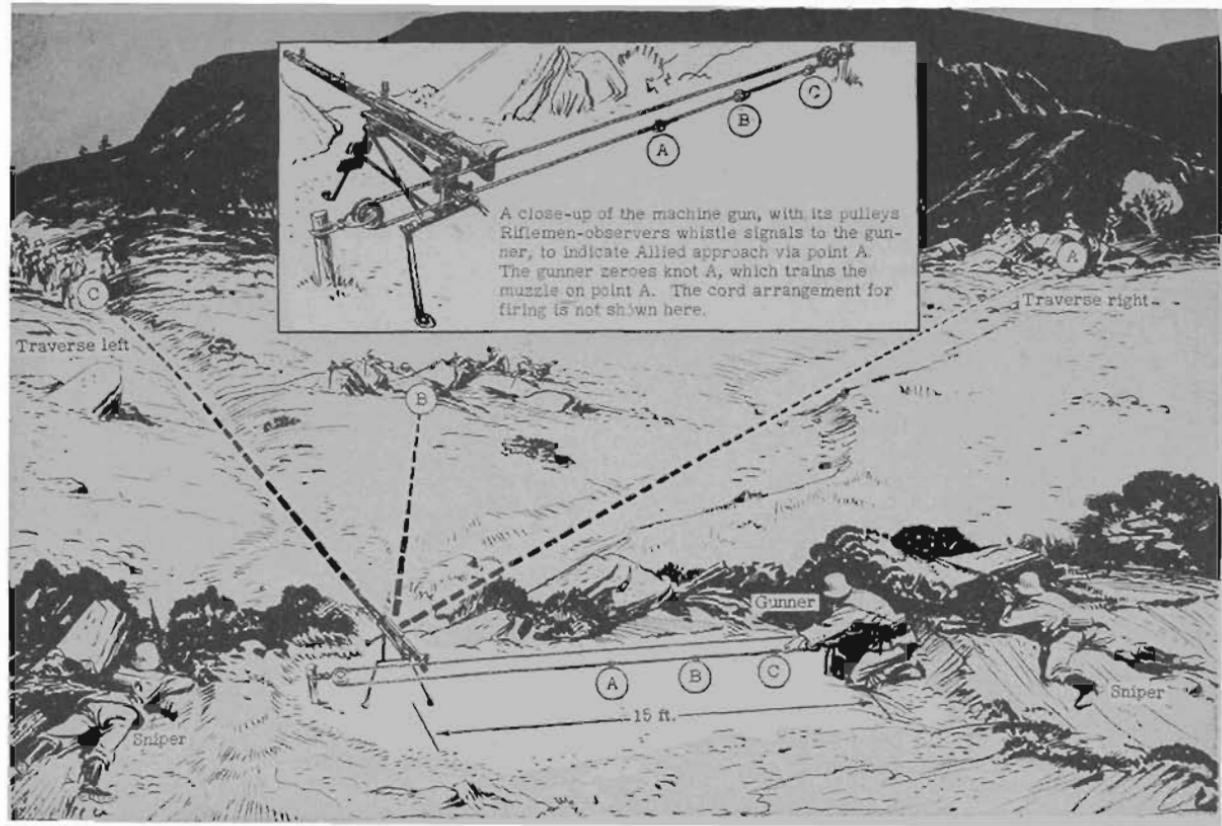


Figure 14. German Machine-gun Trick.

presented, the idea is noted here for what it may be worth as a sample of the German soldier's ingenuity.

The sergeant tells of inspecting a captured German machine-gun emplacement, which had been prepared in the highly novel manner illustrated in Figure 14. A rope had been attached to the butt end of the gun. This rope ran through pulleys set up on each side of the rear of the gun, so that movement of the rope would aim the gun in any lateral direction. The gun then was zeroed at certain positions in the field of fire, and these positions were marked by knots in the rope. Thus the gunner could aim the gun, and, by moving the rope back and forth, spray an area with bullets from a position out of the line of fire when the gun was attacked. The gun was fired by a trigger-and-cord arrangement not shown in the original field sketches.

The German machine-gun crew consisted of a gunner and two or three riflemen who served as observers and who reported to the gunner the particular point on the which the gun should be trained.

BASIC GERMAN



Geländegängiger Mehrzwecke Personenkraftwagen=jeep.